

APPENDIX A

Technical Report 1: Environmental Resources Not Affected by the Vineyard Connector Project



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in support of the
Vineyard Connector Environmental Study

Utah Department of Transportation



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Prepared by
HDR Engineering, Inc.
3995 South 700 East, Suite 100
Salt Lake City, UT 84107

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1.0 Introduction

This report summarizes the environmental resources that would not be affected by the Vineyard Connector (VC) project. The following subjects are covered:

- Air quality
- Environmental justice
- Community facilities
- Visual resources

2.0 Air Quality

2.1 Regulatory Setting

National Ambient Air Quality Standards (NAAQS) include primary national standards to protect public health and secondary standards to protect public welfare (such as protecting property and vegetation from the effects of air pollution). These standards, which are set by the U.S. Environmental Protection Agency (EPA), have been established as the official ambient air quality standards for Utah. For the pollutants addressed in this section, the primary and secondary standards are the same. The current NAAQS are listed in Table 1 below.

If an area meets the NAAQS for a given air pollutant, the area is called an *attainment area* for that pollutant (because the standards have been attained). If an area does not meet the NAAQS for a given air pollutant, the area is called a *non-attainment area*. A *maintenance area* is an area that was previously a non-attainment area and has subsequently been redesignated as an attainment area. To be redesignated as a maintenance area, the area must both meet air quality standards and have a plan for continuing to meet and maintain air quality standards and other requirements of the Clean Air Act.

The pollutants listed in Table 1—that is, the pollutants that have associated NAAQS—are referred to as *criteria pollutants*.

Table 1. National Ambient Air Quality Standards (NAAQS)

Pollutant	National (EPA) Standard ^a	
	Primary	Secondary
<i>Lead (Pb)</i>		
Quarterly average	1.5 µg/m ³	1.5 µg/m ³
<i>Particulate Matter (PM₁₀)</i>		
24-hour average	150 µg/m ³	150 µg/m ³
<i>Particulate Matter (PM_{2.5})</i>		
Annual arithmetic mean	15 µg/m ³	15 µg/m ³
24-hour average	35 µg/m ³	35 µg/m ³
<i>Sulfur Dioxide (SO₂)</i>		
Annual average	0.03 ppm	(no standard)
24-hour average	0.14 ppm	(no standard)
3-hour average	(no standard)	0.50 ppm
<i>Carbon Monoxide (CO)</i>		
8-hour average	9 ppm	(no standard)
1-hour average	35 ppm	(no standard)
<i>Ozone (O₃)</i>		
8-hour average	0.08 ppm	0.08 ppm
<i>Nitrogen Dioxide (NO₂)</i>		
Annual average	0.053 ppm	0.053 ppm

Source: EPA 2007

Annual standards are never to be exceeded. Short-term standards are not to be exceeded more than 1 day per calendar year unless noted otherwise.

µg/m³ = micrograms per cubic meter

ppm = parts per million

PM₁₀ = particulate matter 10 microns in diameter or less

PM_{2.5} = particulate matter 2.5 microns in diameter or less

^a Primary standards are set to protect public health. Secondary standards are based on other factors (for example, protecting crops and materials or avoiding nuisance conditions).

2.2 Environmental Setting

Regional air quality conformity analyses are conducted by the local metropolitan planning organization (in this case, Mountainland Association of Governments [MAG]) as part of the conformity determination it makes for the regional transportation plan and transportation improvement program (MAG 2007a). The VC project is included in the recently updated Regional Transportation Plan (MAG 2007b). This conformity analysis found that all projects included in the analysis, including the VC, would conform to the PM_{10} emission budgets in the State Implementation Plan for meeting air quality standards.

Utah County is a non-attainment area for PM_{10} . The city of Provo is a maintenance area for CO but is outside the VC evaluation area. The region is in attainment for all other criteria pollutants.

Air emissions in the evaluation area are typical of urban, residential environments; that is, emissions result from vehicles, dust, and construction activities. In addition, dust and emissions occur as a result of ongoing agricultural activities and industrial operations.

2.3 Environmental Consequences

As discussed in Section 2.2, Environmental Setting, Utah County is an attainment area for all criteria pollutants except PM_{10} (the city of Provo is a maintenance area for CO but is outside the VC project area). Air quality (PM_{10}) impacts were assessed based on the most recent regional transportation conformity analysis conducted by MAG (MAG 2007a). The Action Alternative would cause an air quality impact if the VC, in conjunction with other planned transportation projects, would cause the amount of PM_{10} emitted from all sources in Utah County to exceed the PM_{10} emission limit in the State Implementation Plan.

As noted in Section 2.2, Environmental Setting, the VC was included in the most recent transportation conformity analysis. That analysis found that the regionally significant projects included in the analysis would conform to the PM_{10} emission budget (that is, the allowed level of PM_{10} emissions) in the State Implementation Plan for meeting air quality standards (MAG 2007a). If all regionally significant transportation projects in Utah County, including the VC, are constructed, the amount of PM_{10} emissions in 2030 would be less than 50% of the allowed level of PM_{10} emissions. The Action Alternative would not result in PM_{10} air quality impacts.

The Utah Department of Transportation (UDOT) Environmental Study checklist states that a CO “hot-spot” analysis must be conducted for roadway widening or

passing-lane projects. For the purpose of this air quality analysis, the VC is considered to be a widening project, so it is subject to a CO hot-spot analysis.

Carbon monoxide impacts were evaluated using the screening-level procedures in UDOT's Air Quality Manual "Hot Spot" Analysis (UDOT 2003). According to UDOT's Air Quality Manual, mainline traffic volumes in Utah County (outside of Provo and Orem) with less than 50,000 vehicles per day for two- and three-lane roads (each direction) are considered "pre-screened" by UDOT and not expected to create CO problems. In 2030, the highest daily traffic volumes associated with the VC would be about 30,000 vehicles per day (both directions) between Geneva Road and Interstate 15 (I-15). The next-highest segment of the VC is about 18,000 vehicles per day between Pleasant Grove Boulevard and Proctor Lane.

Because the expected volume on the VC is less than the 50,000-vehicles-per-day threshold, the project would not result in CO air quality impacts.

3.0 Environmental Justice

This section focuses on environmental justice populations for those portions of the cities of American Fork, Lindon, Vineyard, and Orem and that portion of unincorporated Utah County in the evaluation area.

Environmental justice is a term used to describe the fair and equitable treatment of minority and low-income people (environmental justice populations) with regard to all federally funded projects and activities. Even though the VC project is not federally funded, environmental justice is being considered to ensure that the proposed project does not result in disproportionately high and adverse effects on environmental justice populations.

For the purpose of this study, low-income and minority populations are defined as follows:

- A low-income population is any persons having a household or median income below the poverty thresholds defined by the U.S. Department of Health and Human Services.
- A minority is a person belonging to one of the following five groups: Black, Hispanic, Asian, American Indian or Alaskan Native, or Native Hawaiian or other Pacific Islander.

Minority and low-income people were identified and specific populations, communities, and individual residences were identified using the following methods:

- Examining the 2000 U.S. census (referred to as Census 2000) data
- Project-related public involvement activities
- Analyzing data using geographic information systems (GIS) software

3.1 Environmental Setting

3.1.1 Minority Populations

According to the Census 2000, the three census tracts in the evaluation area are made up of predominantly Caucasian, non-Hispanic persons. Table 2 below provides an overview of the census data on race and minorities by census tract. Overall, census tracts in the evaluation area have lower percentages of racial minorities and somewhat higher percentages of Hispanic minorities compared to Utah County as a whole.

Table 2. Summary of Minority Populations in the Evaluation Area

Area	Census Level/Tract	Total Population	Caucasian	Racial Minorities	Hispanic Minorities
Utah County	—	368,536	92.36%	2.53%	7.00%
Lehi/American Fork	101.01	5,979	94.61%	2.24%	4.15%
Vineyard/Orem	22.01	2,876	90.06%	3.51%	9.14%
Orem/Provo	22.02	5,896	87.75%	3.24%	11.57%

Source: U.S. Census Bureau 2000a

In 2000, the average percentages of Hispanic and racial minorities in the county were 7.0% and 2.5%, respectively (U.S. Census Bureau 2000a). The 2006 American Community Survey results (U.S. Census Bureau 2006) show that the percentage of racial minorities in Utah County changed slightly from 2000 to 2006 to 2.8%, and the percentage of persons of Hispanic or Latino origin (of any race) increased to 8.9%. American Community Survey data are not available for the individual census tracts in the evaluation area.

Two of the three census tracts in the evaluation area have a higher percentage of racial minorities than the county average of 2.5% (see Table 2 above). However, the relative percentage of racial minorities in these tracts is still very low overall, and the area is predominantly Caucasian. The percentage of Hispanic minorities is slightly higher in two of the three tracts, but again the overall percentage is low compared to the county.

During field visits to the VC evaluation area, no minority communities were identified. The evaluation area is dominated by scattered rural residential development, agricultural land, and the former Geneva Steel plant site, which is currently being redeveloped. In general, there are very few people living in the area. The racial distribution of residents that are in the evaluation area appears to be typical of Utah County; any minorities living in the area are scattered throughout and are not concentrated in any specific location or section of the evaluation area.

Summary of Minority Populations in the Evaluation Area

Even though the Census 2000 data show that the census tracts that include the evaluation area have higher percentages of minorities than Utah County as a whole, the rural and scattered nature of development supports very little residential development and no minority communities. There are no minority populations in the evaluation area.

3.1.2 Low-Income Populations

According to the Census 2000 information, 6.8% of Utah County families were living below the federally defined poverty level (U.S. Census Bureau 2000b). As shown in Table 3, all three census tracts in the evaluation area had lower percentages of families living on incomes below the poverty level than the county average.

Table 3. Families with Incomes below Poverty Level in the Evaluation Area

Area	Families with Income below Poverty Level
Utah County	6.8%
Census tract 22.01	1.9%
Census tract 22.02	3.3%
Census tract 101.01	4.7%

Source: U.S. Census Bureau 2000b

Most land in the evaluation area is undeveloped, though farmsteads are scattered throughout. While it is possible that some of the residents of these farmsteads could be low income, field visits to the evaluation area confirm that there are no obvious low-income communities.

Summary of Low-Income Populations in Utah County

Based on the Census 2000 information and field visits to the VC evaluation area, there are no concentrations of low-income populations in the evaluation area.

3.2 Environmental Consequences

Because there are no environmental justice populations in the evaluation area, the project would not result in any environmental justice impacts.

4.0 Community Facilities

4.1 Environmental Setting

Community facilities provide opportunities for residents to interact socially. Community facilities generally include (but are not limited to) schools, churches, community centers, libraries, senior centers, and city facilities (such as city halls). Because the evaluation area is mostly undeveloped, community facilities are limited. Table 4 summarizes the existing community facilities in the evaluation area.

Table 4. Community Facilities in the Vineyard Connector Evaluation Area

Type	Name	Address	City
City Facility	Vineyard City Offices and City Hall	240 E. Gammon	Vineyard
Church	Meeting house of the Church of Jesus Christ of Latter-day Saints	600 South 100 West	American Fork
Church	Meeting house of the Church of Jesus Christ of Latter-day Saints	1250 West 200 South	Lindon
Church	Meeting house of the Church of Jesus Christ of Latter-day Saints	105 South 1800 West	Lindon

4.2 Environmental Consequences

The Action Alternative would not directly affect any of the properties or access to any of the properties listed in Table 4 above.

5.0 Visual Resources

5.1 Affected Environment

This section describes visual resources in the evaluation area. The visual resource analysis area, which is called the viewshed, is where physical changes associated with the proposed project could be seen. The views considered would look outward from the project area or look toward the proposed connector road.

In general, the viewshed for the area is a combination of agricultural and urban areas. The area primarily consists of relatively flat plains traversed by washes and alluvial fans from intermittent stream flows that originate in the Wasatch Mountains to the east. The topography is also marked by lake terraces from the prehistoric Lake Bonneville.

Various land cover types exist in the viewshed including water (Utah Lake), urban and disturbed lands, agricultural lands, grass and shrub lands, and riparian, riverine, and wetland areas. Foreground and middle-ground views of the southern half of the evaluation area are dominated by the highly disturbed Geneva Steel plant site and by industrial uses, including a power plant and waste transfer station. Foreground and middle-ground views in the northern half of the evaluation area are dominated by open, agricultural land with interspersed rural residences and the local road network. The groundcover throughout the evaluation area ranges from sparse in disturbed areas to areas of wet meadows closer to Utah Lake. Most of the native vegetation in the area has been removed or altered. Ongoing residential and commercial and light-industrial development is beginning to encroach into areas that were once dominated by agricultural uses. Distant views in the viewshed include the Wasatch Mountains, Lake Mountains, and the Oquirrh Mountains.

5.2 Environmental Consequences

Construction of the VC would affect foreground and middle-ground views of the evaluation area by introducing a new arterial road into an area that is currently served by smaller local paved and dirt roads. The change would be most noticeable in the sparsely developed northern half of the evaluation area. However, because the terrain is flat, the visual change would probably not be noticeable from most areas in the surrounding valley and would not affect any distance views. The new road would probably be seen from areas to the west that are slightly higher in elevation than the evaluation area, but since I-15 and urban development associated with the cities of American Fork, Lindon, Pleasant

Grove, and Orem would be between these viewpoints and the VC, the visual change would probably not look very dramatic when seen in combination with the freeway and surrounding urban development.

Introduction of a new road into the southern half of the evaluation area would not adversely affect an already highly disturbed area.

Project construction would not affect views from the evaluation area. Because most of the corridor would be on a new road, users would have opportunities to view a landscape that they might not otherwise see. Users would have views of the mountains and agricultural lands in the northern half of the evaluation area and of the Geneva Steel plant site and mountains in the southern half. Views of the Geneva Steel plant site would improve as the area is reclaimed and redeveloped.

Overall, the new road is not expected to adversely affect views of or from the evaluation area.

6.0 References

[EPA] U.S. Environmental Protection Agency

2007 National Ambient Air Quality Standards (NAAQS). www.epa.gov/air/criteria.html.

[MAG] Mountainland Association of Governments

2007a Conformity Determination Report: Mountainland MPO [Metropolitan Planning Organization]
2030 Regional Transportation Plan.

2007b 2030 Regional Transportation Plan.

U.S. Census Bureau

2000a 2000 Census Summary File 1.

2000b 2000 Census Summary File 3.

2006 2006 American Community Survey.

[UDOT] Utah Department of Transportation

2003 Air Quality Manual “Hot Spot” Analysis.